

### **9.3.2.3 NEAFC request to develop suitable criteria for differentiating fisheries into possible management types (e.g. directed deep-water fisheries, by-catch fisheries etc.) and to apply these criteria to categorise individual fisheries in order to enable NEAFC to develop fishery-based management initiatives**

NEAFC requests ICES to develop suitable criteria for differentiating fisheries into possible management types (e.g. directed deep-water fisheries, by-catch fisheries etc.) and to apply these criteria to categorise individual fisheries in order to enable NEAFC to develop fishery-based management initiatives

#### **ICES Response:**

##### **Background**

ICES provided preliminary advice on this request in 2007. Data available at the time were inadequate to provide a comprehensive answer but ICES was able to suggest an appropriate approach that could be taken if suitable data were to be made available;

*“...The work will aim to categorize deep-sea fisheries based on cluster analysis of spatially and temporally resolved NEAFC catch data by gear... However, much of the analysis will depend on the success of being able to link aggregated catch records with the spatial data (the feasibility of this has yet to be determined).”*

In 2008, VMS and catch data were made available to ICES in a form that made it possible to link catch and spatial data. In response to a separate request from NEAFC, ICES evaluated the quality and use of these VMS and log-book data and attempted to link catch records with corresponding VMS position data.

Preliminary analysis revealed that only 27% of the vessels that transmitted VMS data had ever reported catch. ICES advised that;

*“Comprehensive analysis of these data is likely to require significantly greater amounts of time and resources than are available to ICES at present.”* ICES advises that;

##### **Advice**

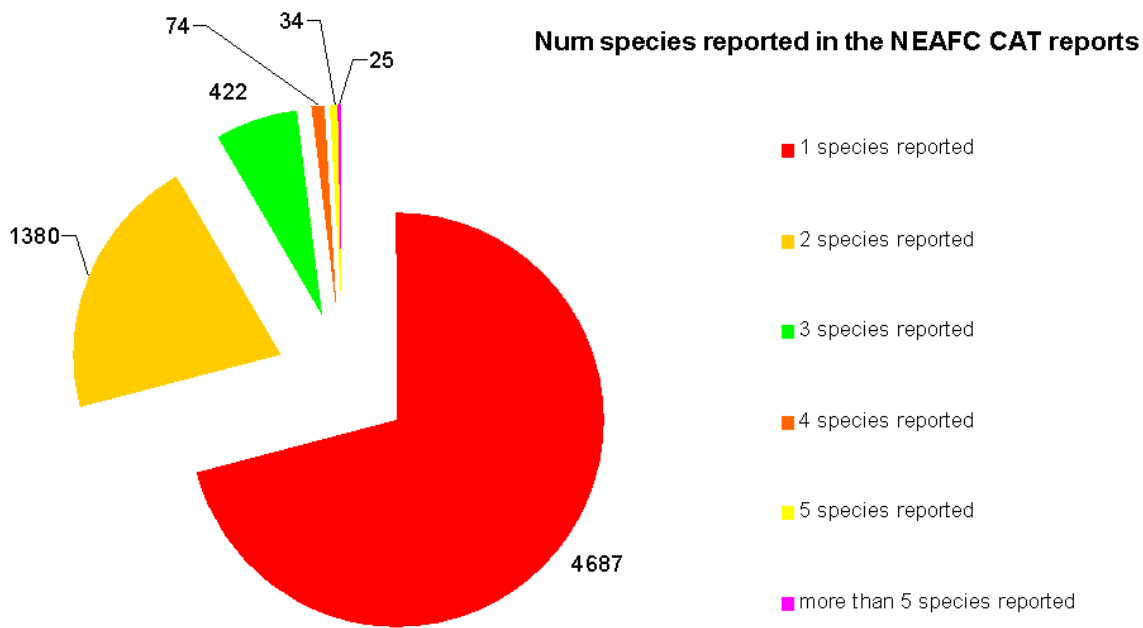
NEAFC could further improve the usefulness of the VMS and catch report data for the purpose of developing criteria to differentiate fisheries into management types by:

- a) including in catch reports the fishing gear used if available;
- b) increasing frequency of transmission (ideally once a day and reported on haul by haul basis) and completeness of catch reports (covering all species in the catch);
- c) increasing the polling frequency of VMS data;
- d) requiring transmission of vessel speed and heading.

##### **Basis for the advice**

Continued analysis during the 2009 meeting of WGDEEP revealed further shortcomings in the quality of these data. In order to focus analysis on the sub-set of the catch relating vessels engaged in deep-water fisheries, the catch data was filtered to remove records of pelagic species leaving only records of demersal species. The species composition of these data showed very high inter-annual variation. This could be due to unexplained variation in exploitation patterns but may also indicate significant amounts of missing data and/or high levels of mis-reporting.

Furthermore, 70% vessels reporting catches of demersal species reported only one species in a given reporting period (Figure 9.3.2.3.1). Since it is very unlikely that these species are caught in single species fisheries, this would suggest catch reports are incomplete, with vessels reporting only their target or most abundant species. This would clearly render the data unsuitable for differentiating between target and bycatch fisheries. This analysis also revealed the presence of an unknown number of duplicate records in the data set.



**Figure 9.3.2.3.1** Numbers of species included in individual catch reports from vessels reporting demersal species.

ICES concludes that no further progress can be made towards differentiating fisheries through cluster analysis until these apparent problems with the data can be explained and accounted for. This could be facilitated by the attendance at future meetings of the working group of an expert from NEAFC with detailed knowledge of the fisheries, the database and NEAFC's reporting protocols. If cluster analysis can be performed on a more robust data set, studies of the species composition within clusters may allow the development of suitable criteria for differentiating between fisheries.

**Source of Information**

ICES. 2009. Report of the Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources (WGDEEP), 9-16 March 2009, ICES Headquarters, Copenhagen. ICES CM 2009/ACOM:14.